

Remarks/Arguments

Claim Summary

By this Amendment, non-elected claims 1-3 and 9 have been canceled without prejudice or disclaimer of their subject matter.

Further, by the Amendment, claims 10, 11 and 13 have been revised, and new claims 17-28 have been added for the Examiner's consideration.

Accordingly, claims 10, 11, 13 and 17-28 are now pending in the application.

35 U.S.C. ¶102 and ¶103

Claims 10, 11 and 13 was rejected under 35 U.S.C. ¶102 or ¶103 as being unpatentable over Bjorkman et al. (US 6340435) or Wang et al. (US 6255735), for the reasons stated at pages 3-4 of the Office Action.

Without acquiescing to the Examiner's reasoning, independent claim 10 has been revised herein to more clearly define over the cited references.

In particular, each of Bjorkman et al. and Wang et al. appear to be directed to the use of underlying (lower) low-k layer as an etch stop when etching an overlying (upper) low-k layer. As such, according to these references, the etch rate of the underlying layer is greater than that of the overlying layer. See, for example, Bjorkman et al. at column 9, lines 45-49; and Wang et al. at column 6, lines 54-63. As one of ordinary skill would appreciate, the lower layer etch stops of the references exhibits lower etch rate than the (upper) layer being etched.

In contrast, according to amended claim 10, the lower (first) layer has a higher etch rate than the upper (second) layer. This is contrary to the teachings of the cited references. Note that the structure defined by claim 10 allows for etching in the case illustrated in FIG. 5(d) of the application. As shown, the lower (first) layer must be etched by a depth "y", and the upper layer (second) must be etched by a depth "x", where $y > x$. Since the etch rate of the lower

layer is greater than that of the upper layer, both layers can be appropriately etched in approximately the same amount of time. See, for example, pages 12-13 of the present specification.

For at least the reasons stated above, Applicants respectfully contend that claim 10 is neither anticipated by nor obvious in view of the teachings of the cited references.

Applicants also contend that dependent claims 11, 13 and 17-22 also define over the cited references at least in view of their dependency upon claim 10.

New claims 23-25 are directed to stack of a carbon-doped SiO₂ dielectric layer having a first etch rate and a carbon-doped silicon nitride dielectric layer having a second etch rate, where the carbon-doped SiO₂ dielectric layer and the carbon-doped silicon nitride dielectric layer have detectably different etch characteristics but generally equal dielectric constants, and where the first etch rate is greater than the second etch rate. Applicants can find no teachings in the cited references of such a structure, and accordingly, it is believed that these claims define over the prior art.

New claims 26-28 are directed to stack of a carbon-doped SiO₂ dielectric layer having a first etch rate and a nitrogen-doped SiC dielectric layer having a second etch rate, where the carbon-doped SiO₂ dielectric layer and the nitrogen-doped SiC dielectric layer have detectably different etch characteristics but generally equal dielectric constants, and where the first etch rate is greater than the second etch rate. Again, Applicants can find no teachings in the cited references of such a structure, and accordingly, it is believed that these claims define over the prior art.

Conclusion

No other issues remaining, reconsideration and favorable action upon the claims 10, 11, 13 and 17-28 now pending in the application are requested.

Respectfully submitted,

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